



Overview

Points To Remember About Atopic Dermatitis

- Atopic dermatitis is the most common kind of eczema, a term that describes many kinds of skin problems.
- The disease causes the skin to become very itchy. Scratching leads to redness, swelling, cracking, “weeping” clear fluid, crusting, and scaling.
- Often, the skin gets worse (flares), and then it improves or clears up (remissions).
- Treatment usually includes medications, proper skin care, and avoiding things that cause allergies.
- Avoid scratching itchy skin, which only worsens symptoms.
- You should not get the smallpox vaccine if you have atopic dermatitis.

What is atopic dermatitis?

Atopic dermatitis is a long-lasting disease that affects the skin. It is not contagious.

Atopic dermatitis is the most common of the many types of eczema, which is a general term for disorders that produce skin inflammation.

What happens in atopic dermatitis?

If you have atopic dermatitis, you lose moisture from the outer layer of the skin. The skin then becomes very dry and has reduced protective abilities. This makes your skin more likely to become infected by bacteria or viruses.

In atopic dermatitis, the skin becomes extremely itchy. Scratching leads to redness, swelling, cracking, “weeping” clear fluid, crusting, and scaling. In most cases, there are periods of time

when the disease is worse (called exacerbations or flares) followed by periods when the skin improves or clears up entirely (called remissions).

Who Gets

Atopic dermatitis is very common and occurs equally in males and females. The disorder most often begins in infancy and childhood.

In infants, atopic dermatitis typically begins around 6 to 12 weeks of age. It may first appear around the cheeks and chin as a patchy facial rash, which can progress to red, scaling, oozing skin that may become infected. Other areas, such as the inner and outer parts of the arms and legs, may also be affected once the infant begins crawling.

In childhood, the rash tends to occur behind the knees and inside the elbows; on the sides of the neck; around the mouth; and on the wrists, ankles, and hands. Often the rash begins with small, round bumps that become hard and scaly when scratched. The skin around the lips may be inflamed, and constant licking of the area may lead to small, painful cracks in the skin around the mouth.

In some children, the disease goes into remission for a long time, only to come back at the onset of puberty when hormones, stress, and the use of irritating skin care products or cosmetics may cause the disease to flare. Even if the disease improves or disappears, the skin often remains dry and easily irritated.

Although a number of people who developed atopic dermatitis as children also experience symptoms as adults, it is also possible for the disease to show up first in adulthood. The pattern in adults is similar to that seen in children; that is, the disease may be widespread or limited to only a few parts of the body. Onset after age 30 is often caused by environmental factors such as:

- Exposure of the skin to harsh or wet conditions.
- Living in the cities.
- Dry climates.

Symptoms

The most common symptoms of atopic dermatitis include:

- Dry skin.
- Rashes on the face, inside the elbows, behind the knees, and on the hands and feet.
- Itching.

Other symptoms depend upon the amount of scratching and whether there are skin infections. Some symptoms may also be seen in other types of skin disorders. Common skin features of

atopic dermatitis include:

- An extra fold of skin under the eye.
- Inflammation of the skin on and around the lips.
- Increased number of skin creases on the palms.
- Eyelids that are darker in color.
- Dry, rectangular scales on the skin.
- Small, rough bumps on the face, upper arms, and thighs.
- Thick, leathery skin due to constant scratching and rubbing.
- Small raised bumps that may open when scratched and become crusty and infected.
- Red, raised bumps that may occur after exposure to an allergen, at the beginning of flares, or after exercise or a hot bath.
- Patchy loss of eyebrows and eyelashes as a result of scratching or rubbing.

Causes

No one knows what causes atopic dermatitis. Children are more likely to develop the disorder if a parent has had it or another disease like asthma or hay fever. This indicates that genetics are involved. Environmental factors can bring on symptoms of atopic dermatitis at any time in affected people.

Atopic dermatitis is also associated with malfunction of the body's immune system, which helps fight off bacteria and viruses. The immune system can become misguided and create inflammation in the skin, even if there isn't a major infection.

In the past, doctors thought that atopic dermatitis was caused by an emotional disorder. Scientists now know that emotional factors, such as stress, can make the condition worse, but they do not cause the disease.

Diagnosis

To diagnose you with atopic dermatitis, your doctor may:

- Ask you about your medical history, including:
 - Your family history of allergies.
 - Whether you also have diseases such as hay fever or asthma.
 - Exposure to irritants, such as:
 - Wool or synthetic fibers.
 - Soaps and detergents.
 - Some perfumes and cosmetics.
 - Substances such as chlorine, mineral oil, or solvents.

- Dust or sand.
 - Cigarette smoke.
- Sleep problems.
- Foods that seem to be related to skin flares.
- Previous treatments for skin-related symptoms.
- Use of steroids or other medications.
- Identify factors that may trigger flares of atopic dermatitis by pricking the skin with a needle that contains a small amount of a suspected allergen.

Your doctor may need to see you several times to make an accurate diagnosis and to rule out other diseases and conditions that might cause skin irritation.

Treatment

The two main goals in treating atopic dermatitis are healing the skin and preventing flares. You should note any changes in the skin's condition in response to treatment to identify which treatments seem to work best.

Treatments can include:

- **Medications:** A variety of medications are used to treat atopic dermatitis.
 - *Corticosteroid* creams and ointments are commonly used to treat diseases affecting the skin. If creams and ointments are not effective, your doctor may prescribe a shorter-term corticosteroid that is taken by mouth.
 - *Antihistamines* that cause drowsiness can reduce nighttime scratching and allow more restful sleep when taken at bedtime.
 - *Calcineurin inhibitors* applied to the skin decrease inflammation and help prevent flares.
 - *Barrier* repair moisturizers reduce water loss and work to rebuild the skin.
- **Phototherapy:** Use of ultraviolet A or B light waves can be an effective treatment for mild to moderate dermatitis.
- **Skin care** that helps heal the skin and keep it healthy.
- **Protection from allergens.**

Who Treats

Atopic dermatitis may be treated by:

- Family doctors or pediatricians, who can help diagnosis the disease or refer you to specialists.
- Dermatologists, who specialize in skin disorders.
- Allergists, who specialize in allergies.

Living With

Besides medications, there are a number of things you can do to help control your atopic dermatitis.

- **Skin care.** Sticking with a daily skin care routine is critical to preventing flares. Skin care should include:
 - Lukewarm baths to cleanse and moisturize the skin without drying it excessively.
 - Using mild bar soap or nonsoap cleanser.
 - Air-drying the skin after bathing or patting it dry gently (avoiding rubbing or brisk drying).
 - A moisturizer to seal in the water that has been absorbed into the skin during bathing. Use cream and ointments and avoid lotions with high water or alcohol content.
 - Protecting the skin from irritants and rough clothing.
- **Reduce allergen exposure.** Examples could include:
 - Encasing mattresses and pillows in special dust-proof covers, frequently washing bedding in hot water, and removing carpeting to reduce exposure to dust mites.
 - Changing the diet in cases of a food allergy.
- **Stress management and relaxation techniques** to decrease the likelihood of flares. Developing a network of support that includes family, friends, health professionals, and support groups or organizations can be beneficial.
- **Prevent scratching or rubbing** which irritates the skin, increases inflammation, and actually increases itchiness. Keep your child's fingernails short to help reduce scratching.
- **Maintain a cool, stable temperature and consistent humidity levels.** Avoid situations where overheating occurs.

Atopic dermatitis and vaccination against smallpox. If diagnosed with atopic dermatitis (or eczema), you should not receive the current smallpox vaccine. You are more likely to develop a serious complication to the vaccine even if your condition is mild or not presently active. Talk to your doctor if you have been in close contact with someone who has recently received the vaccine.

Research Progress

Some promising areas of research include:

- **Genetics:** Although atopic dermatitis runs in families, the role of genetics remains unclear. It does appear that more than one gene is involved in the disease. Scientists have also found that the disease is associated with mutations in a certain gene that normally helps form a protective skin barrier.
- **Skin development and maintenance:** Discoveries about how the body creates and maintains skin will help us understand why the skin barrier breaks down. Researchers are

exploring medicines that can help repair the skin barrier and whether moisturizers applied in infancy (before symptoms appear) could prevent flares in babies at high risk for developing atopic dermatitis.

- **Understanding itch:** Researchers are studying how the nervous system and the immune system communicate to cause the inflammation, itch, and pain seen in atopic dermatitis.
- **Immune system imbalance:** Researchers are exploring factors that play a role in the immune response causing inflammation like that seen in atopic dermatitis. Also, investigators are studying small organisms that normally live on the skin to see how they play a role in keeping skin healthy or contribute to the disease.
- **Phosphodiesterase 4 (PDE4):** A topically applied inhibitor (a drug that blocks the action of certain substances in the body) that can also control the symptoms of the disease.
- **Biologic drug:** A recently approved biologic drug (a drug produced from components of living organisms) administered by injection that may be prescribed for patients whose disease is not controlled adequately by topical therapies, or those for whom topical therapies are not advisable.

Related Resources

U.S. Food and Drug Administration

Toll free: 888-INFO-FDA (888-463-6332)

Website: <https://www.fda.gov>

Drugs@FDA at <https://www.accessdata.fda.gov/scripts/cder/daf>. Drugs@FDA is a searchable catalog of FDA-approved drug products.

Centers for Disease Control and Prevention, National Center for Health Statistics

Website: <https://www.cdc.gov/nchs>

National Institute of Allergy and Infectious Diseases

Website: <https://www.niaid.nih.gov/diseases-conditions/eczema-atopic-dermatitis>

American Academy of Dermatology

Website: <https://www.aad.org>

American Academy of Allergy, Asthma, and Immunology

Website: <https://www.aaaai.org>

National Eczema Association

Website: <https://www.nationaleczema.org>

Food Allergy Research & Education

Website: <https://www.foodallergy.org>

If you need more information about available resources in your language or other languages,

please visit our webpages below or contact the NIAMS Information Clearinghouse at NIAMSInfo@mail.nih.gov.

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